B.Thushar

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EXPERIENCE

Machine learning Engineer (Remote work)   **Rootally AI**   (May 2021 – present)

- Currently engaged in development of robust algorithms for an AI therapist app, with a focus on detecting incorrect postures and repetitions. Proficient in **Kotlin** and **Python**, with a strong background in image processing, pose, hand and face detection models.
- Implemented range of motion checks for exercises, and integrating advanced features such as speed tracking, hand sign detection, eye tracking, and user activity detection using phone sensors (accelerometer and Gyroscope).
- Implemented various sophisticated post-processing filters, including the Kalman filter, smoothing filter, and z-score filter, to optimize the output and ensure smooth and consistent tracking results. Developed a comprehensive library of over **200** exercise algorithms covering pain management, fitness, stroke recovery, and other domains.
- Implemented a robust face orientation detection method utilizing Euler Angles and geometric principles. Trained image processing algorithms to classify tongue movements for facial exercises. Conducted regular testing and validation to assess the performance of the algorithms in real-world scenarios.

TECHNICAL SKILLS

Coursework: Machine Learning, EDA, Data Structures and Algorithms, OOPS Concepts, Deep Learning, Data Visualization, NLP, Image Processing, Artificial Intelligence.

Languages: Python, Kotlin, SQL.

Developer Tools: VS Code, Jupyter, Google Colab, Anaconda, Pycharm, Android studio.

Technologies/Frameworks: Pandas, Numpy, Tensorflow, Keras, OpenCV, Sklearn, Seaborn, Matplotlib, Git, GitHub, firebase, Tableau, stream lit.

Other activities: Active participation in hackathon [kaggle] [Univ.AI], data science blogger [medium], hackerrank coder **[link]**.

PROJECTS

1. PG Diploma project: Stock price prediction using machine learning algorithms. [link]   [2022-22]

- Conducted exploratory data analytics and feature extraction for time series data.
- Performed advanced feature engineering by extracting 38 new features from closing price and date feature.
- Trained several machine learning models, including linear regression, random forest, XGBoost, and LSTM, and   selected **LSTM** model as a most suitable for time series data.
- Deployed four distinct stock models into a web application hosted on **Streamlit Cloud**.

2. M Tech project: Image processing on crops using Convolutional neural network. [link]   **[2020 -21]**

- Developed CNN based classification model to predict leaf disease in potato crop and deployed the model in mobile phone.
- Trained object detection models namely **YOLO**, **SSD** and **Faster R CNN** to detect and classify diseased region in plants.
- Compiled a program to quantify the disease severity in plants using **Open CV** image processing technique by performing colour segmentation and morphological operations on image.

3. Machine learning and Deep learning personal projects

- Big Mart Sales Prediction using Machine Learning Regression Techniques in Python.
- Loan Prediction using Machine Learning Classification Techniques in Python and R.
- Credit Card Fraud detection using supervised and unsupervised algorithms.
- Machine learning and IOT based temperature monitoring system using z-score analysis for outlier detection.
- Chat bot creation using Neural Network.
- Developed sentiment analysis system, document retrieval system and recommendation system using Turicreate and Sframes in colab.
- Built hands on project in artificial intelligence like face and emotion recognition, smart attendence system, diabitic prediction, road sign detection, object tracking, drowsiness detection, fake news detection, OCR, speech and emotion recognition etc.

EDUCATION DETAILS

Examination	University/Institute	Year	CGPA/%
PG Diploma in AI and ML	University of Hyderabad	2021 - 2022	8.3
M.Tech	IIT Kharagpur	2019 - 2021	8.9
B.Tech	College of Agricultural Engineering, Gkvk Bangalore	2015 - 2019	8.23
Intermediate/+2	Ambika Padavi Poorva Vidyalaya, Puttur	2013 -2015	90.16
Matriculation	St.Mary's High school, Uppinangady	2013	91.36

SCHOLASTIC ACHIEVEMENT

- Secured AIR-59 in GATE 2019

TRAINING AND CERTIFICATIONS

- IOT and Machine Learning [link]   Bolt   Mar 2020 - Apr 2020
- Machine Learning Foundations: A Case Study Approach [link]   Coursera   Oct 2020
- Convolutional Neural Networks [link]   Coursera   Nov 2020
- Machine learning and Deep learning in Python and R [link]   Udemy   Dec 2020
- Statistics for Data science [link]   Great Learning   Jan 2021
- Artificial intelligence in Python [link]   Pantech Solutions   Feb 2021 - Mar 2021
- Python for Data Science [link]   Univ.ai   Sep 2021 - Oct 2021

POSITION OF RESPONSIBILITIES

- Successfully supervised and mentored interns by providing guidance, instruction, and support throughout their internship tenure. *(Rootally AI)*
- Engaged directly with clients to understand their needs, challenges, and requirements related to the project *(Rootally AI)*
- NSS volunteer during B Tech program and attended NSS camp for 8 days(2017)
- Attended RAWEP camp for 1 month in Rajakallahalli village, Kolar, Karnataka (2018)
- Organised several awareness programs and Campaigns in the village(2017)